

# **Characterization Summary Report for Operable Unit 3-13, Group 7, VES-SFE-20 Hot Waste Tank System at INTEC**

September 2005

**Idaho  
Cleanup  
Project**

The Idaho Cleanup Project is operated for the  
U.S. Department of Energy by CH2M • WG Idaho, LLC

**ICP/EXT-05-00993  
Revision 0  
Project No. 23052**

**Characterization Summary Report for  
Operable Unit 3-13, Group 7,  
VES-SFE-20 Hot Waste Tank System at INTEC**

**September 2005**

**Idaho Cleanup Project  
Idaho Falls, Idaho 83415**

**Prepared for the  
U.S. Department of Energy  
Assistant Secretary for Environmental Management  
Under DOE Idaho Operations Office  
Contract DE-AC07-05ID14516**

## **ABSTRACT**

This Characterization Summary Report was prepared to document Operable Unit 3-13, Group 7, VES-SFE-20 Hot Waste Tank System, Phase I sampling results. Samples were collected from the tank system in accordance with the *Characterization Work Plan for the VES-SFE-20 Hot Waste Tank at INTEC* (DOE/ID-10747). The samples were analyzed and the data were validated in accordance with Idaho Cleanup Project guidance documents. This report provides the analytical data for Hazardous Waste Management Act/Resource Conservation and Recovery Act contaminants of concern specified in Section 4.1 of the *HWMA/RCRA Closure Plan for VES-SFE-20 Hot Waste System at INEEL Idaho Nuclear Technologies Engineering Center*. Although the HWMA/RCRA Closure Plan only addresses hazardous constituents, this plan also provides analytical information for the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) hazardous substances to support the characterization of this waste by the Department of Energy and the CERCLA program.



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## **ACRONYMS**

CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
COC	contaminant of concern
DEQ	Department of Environmental Quality (Idaho)
FECF	Fuel Examination and Cutting Facility
ICP	Idaho Cleanup Project
INL	Idaho National Laboratory
INTEC	Idaho Nuclear Technology and Engineering Center
L&V	limitations and validation
PCB	polychlorinated biphenyl
RCRA	Resource Conservation and Recovery Act
SVOC	semivolatile organic compound
TAL	target analyte list
TCLP	toxicity characteristic leaching procedure
UTS	Universal Treatment Standard
VOA	volatile organic analysis
VOC	volatile organic compound



# **Characterization Summary Report for Operable Unit 3-13, Group 7, VES-SFE-20 Hot Waste Tank System at INTEC**

## **1. INTRODUCTION**

This Characterization Summary Report was prepared to document the characterization activities performed for the Idaho Nuclear Technology and Engineering Center (INTEC) at the Idaho National Laboratory (INL) Site in accordance with the *Characterization Work Plan for the VES-SFE-20 Hot Waste Tank at INTEC* (DOE-ID 2003a). This report provides the information specified in Section 4.1 of the *HWMA/RCRA Closure Plan for VES-SFE-20 Hot Waste System at INEEL Idaho Nuclear Technologies Engineering Center* (DEQ 2003). Specifically, this requires "...sample results, and identification of contaminants of concern..." to be submitted to the Idaho Department of Environmental Quality (DEQ). To implement this requirement, the sampling of SFE-20 was conducted to determine the presence and concentrations of contaminants of concern (COCs) specified in DEQ-approved Characterization Plan and the HWMA/RCRA Closure Plan.

The excavation and removal activities for the VES-SFE-20 tank system are being performed under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Operable Unit 3-13 Record of Decision (DOE-ID 1999) and under the *HWMA/RCRA Closure Plan for VES-SFE-20 Hot Waste System at INEEL Idaho Nuclear Technologies Engineering Center* (DEQ 2003).

### **1.1 Objectives and Scope**

As stated in the Characterization Plan, the objective of the characterization activities was to sample the tank and provide the results to Idaho DEQ for the COCs associated with this tank system.

This sampling was conducted in accordance with the *Quality Assurance Project Plan for Waste Area Groups 1, 2, 3, 4, 5, 6, 7, 10, and Deactivation, Decontamination, and Decommissioning* (DOE-ID 2004a) and the *Health and Safety Plan for the VES-SFE-20 Hot Waste Tank System* (INEEL 2004) in addition to the *Characterization Work Plan for the VES-SFE-20 Hot Waste Tank at INTEC* (DOE-ID 2003a).

The scope of work detailed in the Characterization Plan included the sampling design, the types of analyses required, and the data quality and validation requirements. Samples were analyzed for radiochemistry, Appendix IX volatile organic compounds (VOCs), Appendix IX semivolatile organic compounds (SVOCs), total metals, Universal Treatment Standard (UTS) metals assessed using the toxicity characteristic leaching procedure (TCLP), formaldehyde, total organic carbon, pH, Freon 12 and 22 (dichlorodifluoromethane and chlorodifluoromethane), and polychlorinated biphenyls (PCBs).

The HWMA/RCRA Closure Plan and this Characterization Summary Report address only the Resource Conservation and Recovery Act (RCRA) hazardous constituents found within the VES-SFE-20 tank system. Additional radionuclide sampling was also conducted of the tank system to provide the CERCLA program with information to facilitate the subsequent management of material associated with the VES-SFE-20 system.



## **2. BACKGROUND**

### **2.1 VES-SFE-20 Tank System**

The VES-SFE-20 tank system and its associated pump house (CPP-642) are located east of CPP-603 near the south perimeter of INTEC (Figure 2-1). The vault and tank, located at a depth of approximately 20 ft below the CPP-642 pump house (Figure 2-2), were sampled in 2005. After completion of the tank sampling activities, the SFE-20 tank was removed from the vault.

Further details about the history of the VES-SFE-20 tank system and descriptions of its components are provided in the *Remedial Design/Remedial Action Work Plan for the VES-SFE-20 Hot Waste Tank System* (DOE-ID 2003b).

### **2.2 VES-SFE-20 Process History**

The VES-SFE-20 hot waste tank system, including the CPP-642 pump house, was constructed in 1957 to collect low-level liquid wastes from the south basin area of CPP-603 and the Fuel Receiving and Storage Facility. Floor drains from the receiving area, the decontamination pad, and the Fuel Examination and Cutting Facility (FECF) collected decontamination solutions, liquids from shipping casks, and other hot waste liquids. The liquid wastes flowed by gravity through underground lines to the VES-SFE-20 tank. A listing of COCs for VES-SFE-20 is included as Table 2-1.

Table 2-1. VES-SFE-20 RCRA contaminants of concern.

Contaminant Type	Contaminant of Concern
Metals	Cadmium Chromium
Volatile organic compounds (VOCs)	Acetone Methylene chloride 1,1,1-trichloroethane Tetrachloroethene Formaldehyde
Semivolatile organic compounds	Freon
Anions	Chlorides Nitrates as N
PCBs	Aroclors
Acidity	Hydrogen ion (pH)

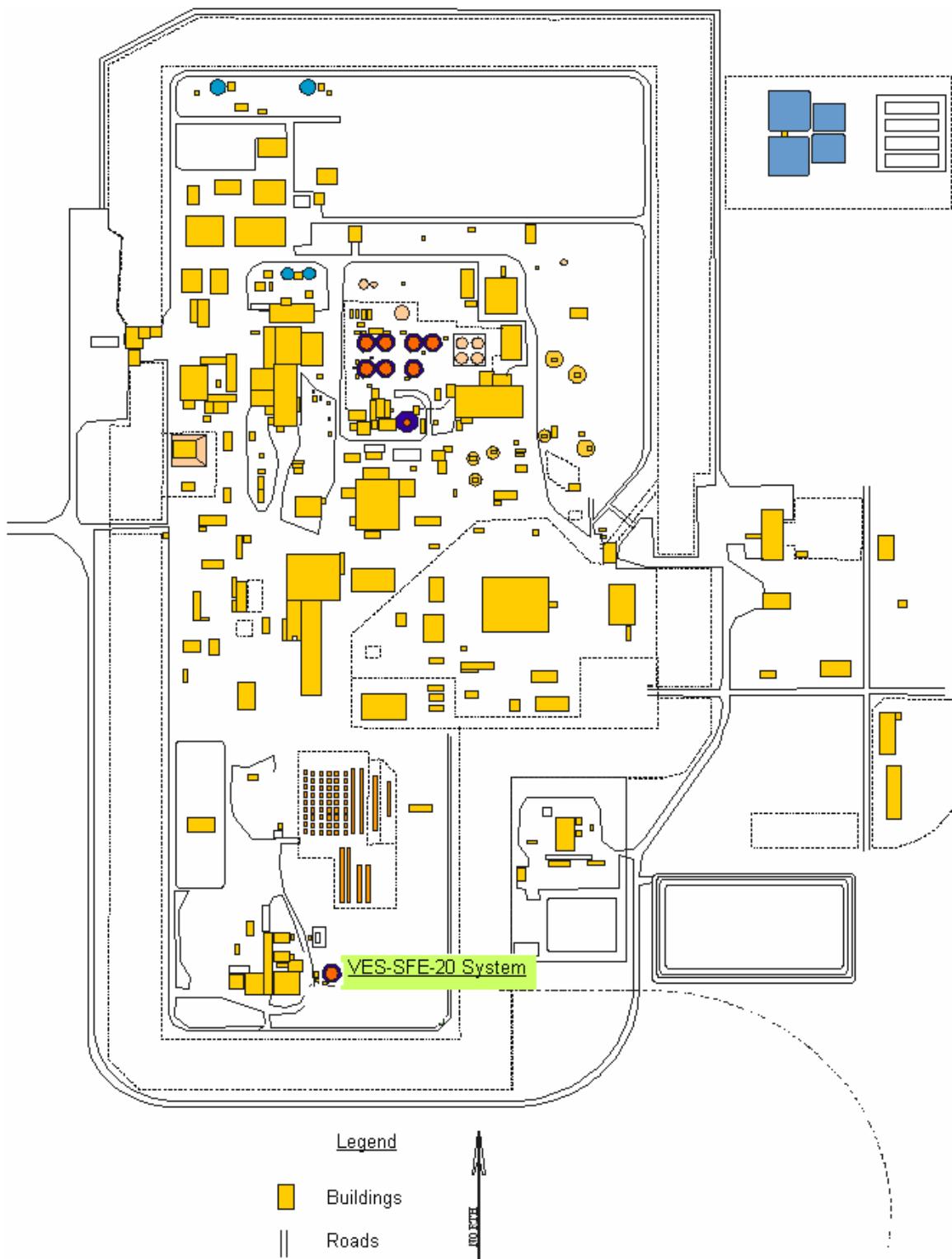


Figure 2-1. Location of VES-SFE-20 in Waste Area Group 3.

2-3

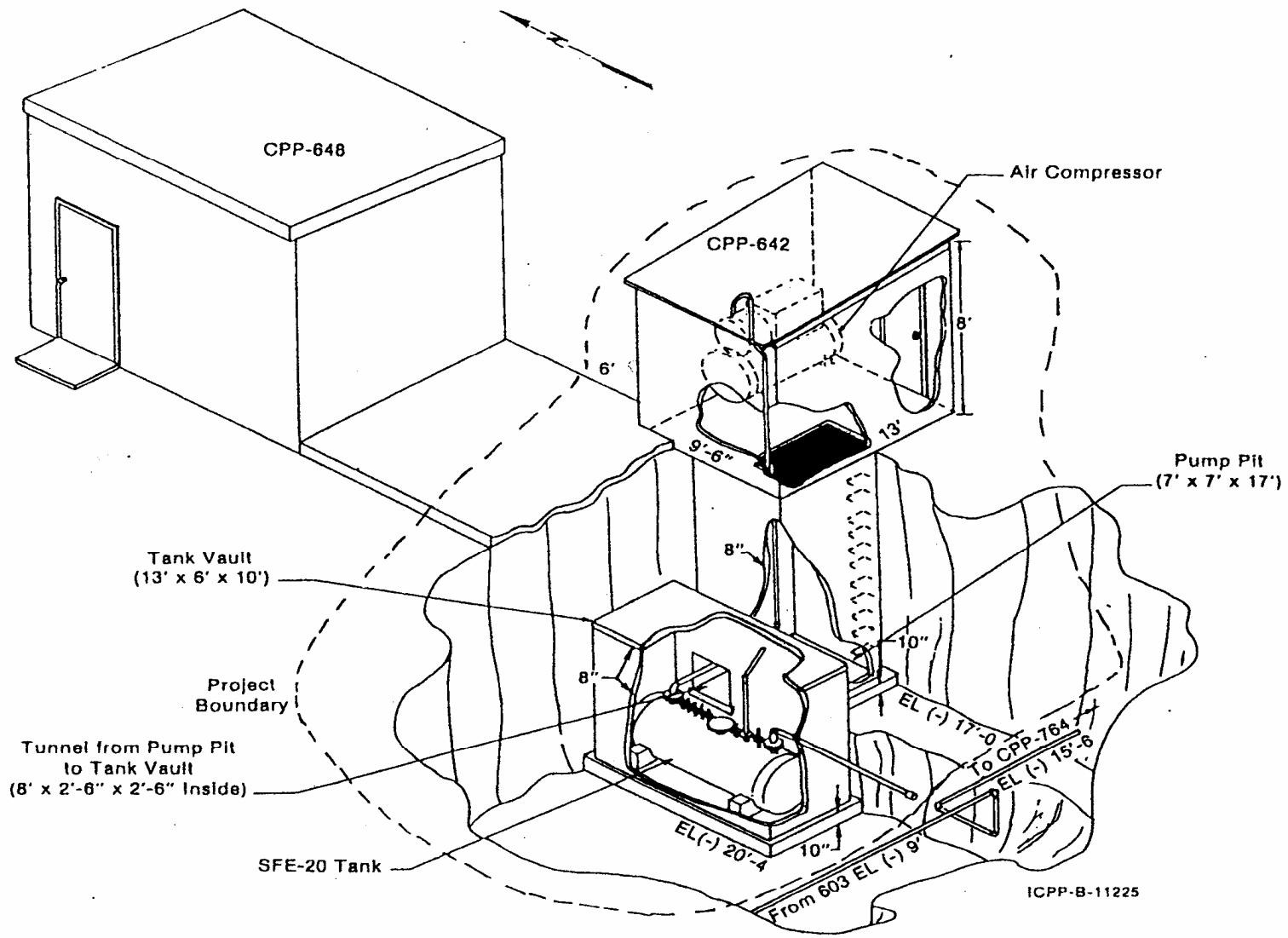


Figure 2-2. Isometric view of tank vault and pump pit.



### **3. CHARACTERIZATION METHODS AND ACTIVITIES**

Characterization activities were performed under the DEQ-approved project-specific Characterization Plan (DOE-ID 2003a). Sampling of the VES-SFE-20 tank and vault was accomplished in April 2005. The methods and materials used to characterize the tank contents are described below.

#### **3.1 Sampling of VES-SFE-20 Tank Contents**

The sampling of the VES-SFE-20 tank was conducted on April 10, 2005. The sampling crew entered the tank vault and removed the 6-in.-diameter tank flange. The tank flange is located at the center of the top of the VES-SFE-20 tank. The sampling crew found that the tank sediment was soft and that the sampling instrument penetrated the sediment to the bottom of the tank. The samples were collected over the entire depth interval from the surface of the sediment to the bottom of the tank as specified in the approved Characterization Plan (Table 3-1).

Table 3-1. Sampling locations for SFE-20 sampling.

Sample Set Number	Location of Sample
SFE20101	VES-SFE-20 tank north of the tank flange
SFE20102	VES-SFE-20 tank south of the tank flange
SFE2010201	VES-SFE-20 vault bottom from between the tank saddles
SFE2010202	VES-SFE-20 vault bottom from between the tank saddles

The samplers collected four individual “grab” scoops from the tank at a location slightly north of the flanged access port. Field radiation readings of the scoops during sample collection ranged from 500 mR/hr to 1,000 mR/hr. The four scoops of material were placed into a sample composite container. A volatile organic analysis (VOA) sample was immediately collected from the material without any mixing. The sample crew was careful to fill the VOA container to the top without leaving any head space. The remaining sample material was then mixed in the sample bowl, and composite samples were collected for the remaining analysis types.

A second set of samples was collected following the same procedure. The second sample set was collected from an area slightly south of the flanged access port toward the drain end of the VES-SFE-20 tank. The radiological control technician reported radiation readings similar to the first sample location. The samplers, once again, collected four scoops of material and placed them into the compositing container. The samplers then collected the VOA sample before mixing. The remaining material was then mixed and the remaining analysis types were collected.

Excess sample material not utilized for samples was returned to the VES-SFE-20 tank. All sampling waste was bagged and handled in accordance with the *Waste Management Plan for the VES-SFE-20 Hot Waste Tank System* (DOE-ID 2003c) and with Section 6 of the *Characterization Work Plan for the VES-SFE-20 Hot Waste Tank at INTEC* (DOE-ID 2003a). Samples were placed in a cooler with Blue Ice and cooled to 4°C. Samples were shipped the next day (April 11, 2005) to the appropriate analytical laboratories.

## **3.2 Sampling of VES-SFE-20 Vault Residuals**

The sampling of the VES-SFE-20 vault was conducted on April 20, 2005, after the tank was removed from the vault. Sampling of the vault residuals was conducted in accordance with the Characterization Plan (Table 3-1).

The sampling crew collected five individual subsamples from the area of the vault between the tank saddles. The five subsamples were at the four corners of the area and the center (“five on a die pattern”). The material was placed into a compositing container and the VOA sample collected without mixing. The sample crew was careful to fill the VOA container to the top without leaving any head space. The sample material was then mixed in the sample bowl, and composite samples were collected for the remaining analysis types.

A second set of subsamples was collected following the same procedure. The second set of subsamples was collected from locations adjacent to each of the first five subsample locations. The material was placed into a compositing container and the VOA sample collected without mixing. The sample crew was careful to fill the VOA container to the top without leaving any head space. The sample material was then mixed in the sample bowl, and composite samples were collected for the remaining analysis types.

All sampling waste was bagged and handled in accordance with the *Waste Management Plan for the VES-SFE-20 Hot Waste Tank System* (DOE-ID 2003c) and with Section 6 of the *Characterization Work Plan for the VES-SFE-20 Hot Waste Tank at INTEC* (DOE-ID 2003a). Samples were placed in a cooler with Blue Ice and cooled to 4°C. Samples were shipped the next day (April 21, 2005) to the appropriate analytical laboratories.

## **4. SAMPLE ANALYTICAL RESULTS**

Sample analyses for moisture content, percent solids, total organic carbon, and formaldehyde were performed by Southwest Research Institute under ER-TOS-A2536. Analyses for UTS metals assessed using TCLP, total metals, anions, Appendix IX (40 CFR 264) target analyte list (TAL) SVOCs, Appendix IX (40 CFR 264) TAL VOCs, PCBs, and Freon 12 and 22 (dichlorodifluoromethane and chlorodifluoromethane) were performed by BWXT of Lynchburg, VA. Analytical data were validated to a Level "A" following Idaho Cleanup Project (ICP) procedures. The following are definitions of validation qualifiers:

- U      The analyte was analyzed for but was not detected above the reported sample quantitation limit.
- UJ     The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- J       The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- R       The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

The discussions in the following sections focus on sample results from the SFE-20 tank. This is due to the Closure Plan's requirement to provide characterization data for this tank. However, for informational purposes, the tables also include sample data associated with SFE-20 vault, since these samples were collected as part of the implementation of the SFE-20 Characterization Work Plan (DOE-ID 2003a).

### **4.1 Inorganic Results**

Analyses were conducted for UTS metals; contract laboratory program TAL metals (Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Pb, Fe, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn); and anions (including chlorides, nitrates as N, bromide, fluoride, orthophosphate-P, and sulfate). The analytical results for total metals are listed in Table 4-1. The analytical results for UTS metals are listed in Table 4-2. The analytical results for anions are listed in Table 4-3.

### **4.2 Organic Results**

Analyses were conducted on sample material for Appendix IX (40 CFR 264) TAL SVOCs, Appendix IX (40 CFR 264) TAL VOCs, PCBs, formaldehyde, and Freon 12 and 22 (dichlorodifluoromethane and chlorodifluoromethane).

#### **4.2.1 Semivolatile Organic Compounds**

Semivolatile organic analysis results indicate that four compounds were detected. Butylbenzylphthalate was detected in a single sample, while bis(2-ethylhexyl)phthalate was detected in both samples taken from within the VES-SFE-20 tank. Butylbenzylphthalate and phenanthrene were detected near their detection limits. No other SVOCs were detected. The analytical data for the detected SVOCs are listed in Table 4-4.

Table 4-1. Analytical results for total metals.

Compound/ Isotope	SFE201019A (Tank)		SFE201029A (Tank)		SFE20102019A (Vault)		SFE20102029A (Vault)	
	Results (mg/kg)	Validation Qualifier	Results (mg/kg)	Validation Qualifier	Results (mg/kg)	Validation Qualifier	Results (mg/kg)	Validation Qualifier
Aluminum	4,810	J	4,050	J	6,290		7,050	
Antimony	1.78	J	4.78	J	a	UJ	a	UJ
Arsenic	4.93		5.04		6.79		8.12	
Barium	69.6		74.5		198	J	295	J
Beryllium	a	U	a	U	a	U	a	U
Cadmium <sup>b</sup>	12.6	J	7.34	J	11.4	J	14.7	J
Calcium	4,520		4,050		73,200		83,300	
Chromium <sup>b</sup>	554	J	669	J	442		914	
Cobalt	3.38		4.75		24.3		28.3	
Copper	48.5	J	38	J	209		262	
Iron	16,600		17,900		17,100		28,500	
Lead	786		745		877		1,130	
Magnesium	520	J	642	J	3,270		2,220	
Manganese	89.1	J	96	J	260	J	261	J
Nickel	213	J	302	J	120	J	131	J
Potassium	402	J	497	J	1,770		1,870	
Selenium	7.13	J	17	J	1.54	J	3.09	J
Silver	2.67		2.38		1.8		1.7	
Sodium	a	R	a	R	2,130		1,960	
Thallium	0.082		0.118		0.154		0.143	
Vanadium	15.3	J	13.8	J	19.6		48.3	
Zinc	302	J	234	J	867	J	943	J
Mercury	17.9		18.9		0.168		0.182	

a. No result based on qualifier. See Section 4 for definitions of qualifiers.

b. Contaminant of concern as identified in Table 2-1.

Table 4-2. Analytical results for UTS metals.

Compound/ Isotope	SFE201019A (Tank)		SFE201029A (Tank)		SFE20102019A (Vault)		SFE20102029A (Vault)		Detection Limit
	Results (µg/L)	Validation Qualifier	Results (µg/L)	Validation Qualifier	Results (µg/L)	Validation Qualifier	Results (µg/L)	Validation Qualifier	
Antimony	3		2.4		3.52		8.6		0.267
Arsenic	2.6		3.87		2.5		2.97		0.356
Barium	112		126		129	J	107	J	0.878
Beryllium	0.311		0.311		0.333		0.356		0.311
Cadmium <sup>a</sup>	96.4	J	107	J	107		106		0.722
Chromium <sup>a</sup>	12		40.1		13.6		11.4		0.611
Lead	438		1,320		33.1	J	24	J	0.967
Nickel	487		1,080		1,010		858		3.11
Selenium	14.6		94.6		3.47		b	UJ	0.489
Silver	0.122		0.122		b	UJ	b	UJ	0.122
Thallium	1.54		1	U	6.56		4.01		0.722
Vanadium	16.4		16.4		16.4		16.4		16.4
Zinc	1,380	J	1,780	J	6,790		6,090		92.2
Mercury	b	UJ	b	UJ	b	UJ	b	UJ	0.14

a. Contaminant of concern as identified in Table 2-1.

b. No result based on qualifier. See Section 4 for definitions of qualifiers.

Table 4-3. Analytical results for anions.

Anion	SFE201019A (Tank)		SFE201029A (Tank)		SFE20102019A (Vault)		SFE20102029A (Vault)	
	Results (mg/kg)	Validation Qualifier	Results (mg/kg)	Validation Qualifier	Results (mg/kg)	Validation Qualifier	Results (mg/kg)	Validation Qualifier
Bromide	a	U	a	U	a	U	a	U
Chloride <sup>b</sup>	19.50	J	32.60	J	40.00	J	75.40	J
Fluoride	a	U	a	U	a	U	a	U
Nitrate as N <sup>b</sup>	a	UJ	a	UJ	5.74	J	7.36	J
Ortho-phosphate as P	0.51		0.27		a	U	a	U
Sulfate	4.63	J	4.69	J	261	J	306	J

a. No result based on qualifier. See Section 4 for definitions of qualifiers.  
b. Contaminant of concern as identified in Table 2-1.

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Table 4-4. Analytical results for SVOCs.

Semivolatile Compounds	SFE201011G (Tank)		SFE201021G (Tank)		SFE20102011G (Vault)		SFE20102021G (Vault)	
	Results (mg/kg)	Validation Qualifier	Results (mg/kg)	Validation Qualifier	Results (mg/kg)	Validation Qualifier	Results (mg/kg)	Validation Qualifier
2-Methylnaphthalene	a	U	0.109	J	a	U	a	U
Bis(2-ethylhexyl) phthalate	32.9	J	29.6	J	0.689	J	0.375	J
Butylbenzylphthalate	1.42	J	0.717	J	0.171	J	a	UJ
Phenanthrene	0.389	J	0.328	J	a	U	a	U

a. No result based on qualifier. See Section 4 for definitions of qualifiers.

## **4.2.2 Volatile Organic Compounds**

VOC analysis was conducted on samples taken from the interior of the VES-SFE-20 tank. Fourteen VOCs were detected in both samples, while acetone and chloroethane were detected in one of the two samples. Results for all detected VOA constituents were flagged with a “J” qualification flag. A discussion of the data and this qualification is presented in Section 5. The analytical data for the detected volatile compounds are listed in Table 4-5. Freon is included in the list of possible COCs based upon process knowledge. Analytical data for Freon 12 (dichlorodifluoromethane) and Freon 22 (chlorodifluoromethane) are listed in Table 4-6.

## **4.2.3 Polychlorinated Biphenyls**

Samples were analyzed for a variety of PCBs including Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, and Aroclor-1260. The only detected PCB was Aroclor-1260. The analytical data for Aroclor-1260 are listed in Table 4-7.

## **4.2.4 Formaldehyde**

All formaldehyde analyses were validated as undetected. Data are listed in Table 4-8.

## **4.3 Radionuclides**

Samples were collected and analyzed for radionuclides to provide data for waste management and CERCLA purposes. Radionuclide data are not included in this RCRA summary report.

## **4.4 Sample pH**

Data for the pH of samples collected from the tank and vault are listed in Table 4-9.

Table 4-5. Analytical results for VOCs.

Volatile Organic Compounds	SFE201011G (Tank)		SFE201021G (Tank)		SFE20102011G (Vault)		SFE20102021G (Vault)	
	Results (mg/kg)	Validation Qualifier	Results (mg/kg)	Validation Qualifier	Results (mg/kg)	Validation Qualifier	Results (mg/kg)	Validation Qualifier
1,1,1,2-tetrachloroethane	0.034	J	0.0341	J	a	U	a	U
1,1,1-trichloroethane <sup>b</sup>	24.2	J	30.1	J	0.232	J	0.107	J
1,1,2-trichloroethane	0.143	J	0.139	J	a	U	a	U
1,1-dichloroethane	5.39	J	3.74	J	0.0015	J	a	U
1,1-dichloroethene	10.7	J	6.9	J	a	U	a	U
2-Butanone	a	U	a	U	0.0117		0.0104	J
Acetone <sup>b</sup>	0.0912	J	a	U	0.147	J	0.45	J
Carbon disulfide	0.0016	J	0.0011	J	a	U	a	U
Chlorobenzene	0.0011	J	0.0014	J	a	U	a	U
Chlorodifluoromethane	0.0083	J	0.0072	J	a	U	a	U
Chloroethane	0.0055	J	a	U	a	U	a	U
Chloromethane	0.0164	J	0.0036	J	a	U	a	U
Ethylbenzene	0.0082	J	0.0105	J	a	U	a	U
Tetrachloroethene <sup>b</sup>	0.0021	J	0.0023	J	a	U	a	U
Toluene	0.0466	J	0.0526	J	0.0092	J	0.01	J
Trichloroethene	0.0056	J	0.0053	J	a	U	a	U
Vinyl chloride	0.0077	J	0.0047	J	a	U	a	U
Xylene	0.0508	J	0.0737	J	a	U	a	U

a. No result based on qualifier. See Section 4 for definitions of qualifiers.

b. Contaminant of concern as identified in Table 2-1.

Table 4-6. Analytical results for Freon.

Compound/Isotope	SFE201011G (Tank)		SFE201021G (Tank)	
	Results (mg/kg)	Validation Qualifier	Results (mg/kg)	Validation Qualifier
Freon 22 (chlorodifluoromethane) <sup>a</sup>	0.0083	J	0.0072	J
Freon 12 (dichlorodifluoromethane) <sup>a</sup>	b	R	b	UJ

a. Contaminant of concern as identified in Table 2-1.  
 b. No result based on qualifier. See Section 4 for definitions of qualifiers.

Table 4-7. Analytical results for Aroclor-1260.

Compound/ Isotope	SFE201011G (Tank)		SFE201021G (Tank)		SFE20102011G (Vault)		SFE20102021G (Vault)	
	Results (mg/kg)	Validation Qualifier	Results (mg/kg)	Validation Qualifier	Results (mg/kg)	Validation Qualifier	Results (mg/kg)	Validation Qualifier
Aroclor-1260 <sup>a</sup>	1.20E+01	J	6.60E+00	UJ	4.30E-01		8.80E-01	J

a. Contaminant of concern as identified in Table 2-1.

Table 4-8. Analytical results for formaldehyde.

Compound/ Isotope	SFE201013A (Tank)		SFE201023A (Tank)		SFE20102013A (Vault)		SFE20100213A (Vault)	
	Results (mg/kg)	Validation Qualifier	Results (mg/kg)	Validation Qualifier	Results (mg/kg)	Validation Qualifier	Results (mg/kg)	Validation Qualifier
Formaldehyde <sup>a</sup>	b	U	b	U	b	U	b	U

a. Contaminant of concern as identified in Table 2-1.

b. No result based on qualifier. See Section 4 for definitions of qualifiers.

Table 4-9. Analytical data for pH.

	SFE201019A (Tank)		SFE201029A (Tank)		SFE20102019A (Vault)		SFE20102029A (Vault)	
	Results in pH Units	Results in pH Units	Results in pH Units	Results in pH Units	Results in pH Units	Results in pH Units	Results in pH Units	Results in pH Units
pH <sup>a</sup>	4.4		4.21		8.4		8.1	

a. Contaminant of concern as identified in Table 2-1.

## 5. EVALUATION AND USABILITY SUMMARY OF DATA

The solid samples collected from the VES-SFE-20 tank were identified as SFE201021G and SFE201011G, and the samples from the vault were identified as SFE20102011G, and SFE20102021G. All samples were analyzed for Appendix IX target analytes following SW-846 protocol for SVOCs and VOCs. The generated data were validated according to approved INL procedures, and validation flags were assigned to the sample results based on the associated laboratory quality control results. The technical evaluation and data usability assessment are based on information provided in the following limitations and validation (L&V) reports and laboratory data packages:

- Tetra Tech NUS, Inc., *Organic Data Limitations and Validation Report for the Idaho National Laboratory SFE-20 Hot Waste Tank Sampling*, Rev. 1, L&V Report No. TTN #0412, SDG SFE201011G, July 1, 2005
- Tetra Tech NUS, Inc., *Organic Data Limitations and Validation Report for the Idaho National Laboratory SFE-20 Hot Waste Tank Sampling*, L&V Report No. TTN #0413, SDG SFE201011G, July 1, 2005
- Tetra Tech NUS, Inc., *Organic Data Limitations and Validation Report for the Idaho National Engineering and Environmental Laboratory SFE-20 Hot Waste Tank Additional Sampling*, Rev. 1, L&V Report No. TTN #0330, SDG SFE20102011G, July 1, 2005
- Tetra Tech NUS, Inc., *Organic Data Limitations and Validation Report for the Idaho National Laboratory SFE-20 Hot Waste Tank Additional Sampling*, Rev. 1, L&V Report No. TTN #0415, SDG SFE20102011G, July 1, 2005
- BWXT Services, Inc. NEL Services, *Data Report for INEEL*, SDG Number SFE20102011G, Laboratory Report No. 0504040 SVO, TOS-A2524, June 3, 2005
- BWXT Services, Inc. NEL Services, *Data Report for INEEL*, SDG Number SFE201011G, Laboratory Report No. 0504027 SVO, TOS-A2524, May 18, 2005
- BWXT Services, Inc. NEL Services, *Data Report for INEEL*, SDG Number SFE20102011G, Laboratory Report No. 0504040 VOA, TOS-A2524, May 11, 2005
- BWXT Services, Inc. NEL Services, *Data Report for INEEL*, SDG Number SFE201011G, Laboratory Report No. 0504027 VOA, TOS-A2524, May 11, 2005.

Data validation flags are intended to alert the data user to anomalies noted in the review of several different quality control analyses. The assignment of validation flags does not necessarily mean that the data are invalid. Data rejected during validation may still be useful for making decisions in certain cases. The intent of this technical evaluation is not to reiterate information provided in the L&V reports. Rather, this evaluation focuses on the more significant issues identified and the impact to the data user. In the following sections, the assigned data validation flags are defined, the potential bias in the sample data (if known) is discussed, and the impact to overall data usability is addressed.

## 5.1 Semivolatile Organic Compounds

According to the case narratives in both data packages, the laboratory experienced difficulties with the analyses due to interferences from the sample matrix. The difficulties included shifts in retention times; multiple unknown, nontarget analytes; and damage to the analytical column (significant enough to require the column to be replaced). The large number of unknown, nontarget analytes, degradation of the analytical column(s), and the resulting elevated baseline likely contributed to several of the quality control deficiencies identified during the SVOC validation.

In the validation of the SVOCs, the validation flag “J” (estimated) or “UJ” (undetected estimated value) was assigned to several sample results as described in the L&V reports. The technical evaluation performed included a review of the quality control results that were the basis for the validation flags. The positive results were largely based on a potential high bias reflected in surrogate recoveries. A high bias would only be more conservative and should not negatively impact decisions. Undetected results were flagged based on discrepancies noted in initial or continuing calibration criteria. Had these compounds been present in samples at significant concentrations, a positive detection would have been made. Therefore, the impact of “J” or “UJ” flags to the data usability is minimal, and the data should be used, as reported.

Phthalate compounds are known laboratory contaminants; however, the levels of phthalates reported in the SFE-20 samples make it difficult to consider the observed concentrations solely the result of laboratory contamination. Although the validation flag “U” (undetected) was correctly assigned to the results reported for the compound di-n-butylphthalate to denote that the concentrations reported in tank samples SFE201021G and SFE201011G could not be distinguished from the level detected in the corresponding laboratory blank, vault samples SFE20102011G and SFE20102021G were analyzed at 10-fold dilutions because the concentration of di-n-butylphthalate exceeded the linear calibration range of the instrument. Similarly, a five-fold dilution was necessary to bring the detected concentrations of the compound bis(2-ethylhexyl)phthalate in tank samples SFE201011G and SFE201021G within the calibration range; however, no dilution was necessary for this compound in vault samples SFE20102011G and SFE20102021G. The review of the chromatograms indicates that these compounds are present within the samples at significant concentrations.

The undetected result reported for 4-nitrophenol in sample SFE201021G was assigned an “R” validation flag (rejected) to denote the potential low bias reflected in the matrix spike and matrix spike duplicate analyses (0% recovery). The percent recovery for this compound (72% and 61%) was acceptable in the laboratory control sample and duplicate laboratory control sample analyses. This suggests that the low bias results of the matrix spike and matrix spike duplicate resulted from matrix effects. Therefore, the data for 4-nitrophenol should be used, as reported.

The undetected results reported for several compounds in sample SFE201011G were assigned the validation flag “R” (rejected) to denote the potential low bias reflected in low internal standard areas. However, the low internal standard areas do not appear to be indicative of a loss of instrument sensitivity in this case as all surrogate recoveries reported in this sample are high-biased. Based on the surrogate recoveries, had these compounds been present in significant concentrations, a positive detection would likely have been made. Therefore, the impact of the low internal standard areas to data usability is deemed to be minimal and the undetected concentrations can be used as reported.

## 5.2 Volatile Organic Compounds

The case narrative notes interferences encountered as a consequence of the high concentrations of the compounds detected in tank samples SFE201011G and SFE201021G. The technical evaluation

included a review of the chromatograms associated with these samples. The high concentrations of 1,1,1-trichloroethane, 1,1-dichloroethene, and 1,1-dichloroethane produced extraordinarily wide and poorly resolved peaks. The impact on retention time shifts and peak shapes likely accounts for low surrogate recoveries and low internal standard areas noted in the validation packages for these two samples. The reported results for 1,1,1-trichloroethane, 1,1-dichloroethene, and 1,1-dichloroethane exceed the calibration range and are likely low-biased. The review of the spectra indicates that the detections are real. Therefore, the reported concentrations for 1,1,1-trichloroethane, 1,1-dichloroethene, and 1,1-dichloroethane should be utilized.

The validation flag “R” (rejected) was assigned to the undetected results reported for sample SFE201011G based on the potential low bias reflected in the recovery of the surrogate compound dibromofluoromethane (<10%). The validation report notes that the surrogate recovery is also low in the matrix spike and matrix spike duplicate analyses, suggesting a matrix interference. The concentration for the surrogate compound is insignificant when compared to the concentration of target analytes detected. Therefore, the impact to data usability of the undetected results should be minimal, and the results as reported can be used.

Because of the low bias reflected in the low relative response factors in the initial and continuing calibrations for the compounds acrolein, acetonitrile, isobutyl alcohol, and 1,4-dioxane, the validation flag “R” (rejected) was assigned to the undetected results for these compounds in samples SFE201011G, SFE201021G, SFE20102011G, and SFE20102021G. These compounds are known to be poor responders; however, the fact that they were detected in the initial and continuing calibrations suggests that a positive detection would have been made had these compounds been present in the samples. Therefore, the impact to data usability is deemed to be minimal, and the results as reported can be used.

The reported result for acetone (450 µg/kg) in vault sample SFE20102021G was reported from an analysis that exceeded the corresponding calibration range. Acetone was assigned the validation flag “J” (estimated) to denote the potential low bias in this result. Although acetone is a common laboratory contaminant, the concentrations at which it was observed would not be indicative solely of laboratory contamination. Therefore, the reported concentration for acetone should be used.



## **6. SUMMARY**

This report provides the sample results for the Hazardous Waste Management Act/Resource Conservation and Recovery Act COCs specified in Section 4.1 of the *HWMA/RCRA Closure Plan for VES-SFE-20 Hot Waste System at INEEL Idaho Nuclear Technologies Engineering Center* (DEQ 2003). Samples were collected from the VES-SFE-20 tank system in accordance with the *Characterization Work Plan for the VES-SFE-20 Hot Waste Tank at INTEC* (DOE-ID 2003a). The samples were analyzed and the data were validated in accordance with ICP guidance documents. In addition, the data were evaluated and their usability assessed to ensure that accurate information is used to characterize the wastes.



## 7. REFERENCES

40 CFR 264, Appendix IX, 2005, "Ground-Water Monitoring List," *Code of Federal Regulations*, Office of the Federal Register, August 2005.

DOE-ID, 1999, *Final Record of Decision, Idaho Nuclear Technology and Engineering Center*, DOE/ID-10660, Rev. 0, U.S. Department of Energy Idaho Operations Office; U.S. Environmental Protection Agency, Region X; Idaho Department of Environmental Quality, October 1999.

DOE-ID, 2003a, *Characterization Work Plan for the VES-SFE-20 Hot Waste Tank at INTEC*, DOE/ID-10747, Rev. 4, U.S. Department of Energy Idaho Operations Office, September 2003.

DOE-ID, 2003b, *Remedial Design/Remedial Action Work Plan for the VES-SFE-20 Hot Waste Tank System*, DOE/ID-11048, Rev. 0, U.S. Department of Energy Idaho Operations Office, June 2003.

DOE-ID, 2003c, *Waste Management Plan for the VES-SFE-20 Hot Waste Tank System*, DOE/ID-11049, Rev. 0, U.S. Department of Energy Idaho Operations Office, June 2003.

DOE-ID, 2004, *Quality Assurance Project Plan for Waste Area Groups 1, 2, 3, 4, 5, 6, 7, 10, and Deactivation, Decontamination, and Decommissioning*, DOE/ID-10587, Rev. 8, U.S. Department of Energy Idaho Operations Office, March 2004.

ER-TOS-A2536, 2005, "Abbreviated Task Order Statement of Work for SFE-20 Hot Waste Tank Sampling," Rev. 2, Idaho National Laboratory, June 9, 2005.

DEQ, 2003, "HWMA/RCRA Closure Plan for VES-SFE-20 Hot Waste System at INEEL Idaho Nuclear Technologies Engineering Center," Idaho Department of Environmental Quality, May 2003.

INEEL, 2004, *Health and Safety Plan for the VES-SFE-20 Hot Waste Tank System*, INEEL/EXT-02-01436, Rev. 1, Idaho National Engineering and Environmental Laboratory, January 2004.



## **Appendix A**

### **Operable Unit 3-13, VES-SFE-20 Tank and Vault Removal Sample Results**



Table A-1. Tank and vault removal sample results.

Compound/Isotope	Sample ID	Method	Results	Units	Detection Limit	Qualifier	Tank/Vault	Remarks
Formaldehyde	SFE201013A	8315	a	mg/kg		U	Tank	
Formaldehyde	SFE201023A	8315	a	mg/kg		U	Tank	
Formaldehyde	SFE20102013A	8315	a	mg/kg		U	Vault	
Formaldehyde	SFE20100213A	8315	a	mg/kg		U	Vault	
Aluminum	SFE201019A	6020A	4,810	mg/kg	0.847	J	Tank	Total metals
Antimony	SFE201019A	6020A	1.78	mg/kg	0.03	J	Tank	Total metals
Arsenic	SFE201019A	6020A	4.93	mg/kg	0.04		Tank	Total metals
Barium	SFE201019A	6020A	69.6	mg/kg	0.1		Tank	Total metals
Beryllium	SFE201019A	6020A	a	mg/kg	0.035	U	Tank	Total metals
Cadmium	SFE201019A	6020A	12.6	mg/kg	0.082	J	Tank	Total metals
Calcium	SFE201019A	6020A	4,520	mg/kg	42.7		Tank	Total metals
Chromium	SFE201019A	6020A	554	mg/kg	0.069	J	Tank	Total metals
Cobalt	SFE201019A	6020A	3.38	mg/kg	0.027		Tank	Total metals
Copper	SFE201019A	6020A	48.5	mg/kg	0.202	J	Tank	Total metals
Iron	SFE201019A	6020A	16,600	mg/kg	2.18		Tank	Total metals
Lead	SFE201019A	6020A	786	mg/kg	0.11		Tank	Total metals
Magnesium	SFE201019A	6020A	520	mg/kg	0.683	J	Tank	Total metals
Manganese	SFE201019A	6020A	89.1	mg/kg	0.104	J	Tank	Total metals
Nickel	SFE201019A	6020A	213	mg/kg	0.354	J	Tank	Total metals
Potassium	SFE201019A	6020A	402	mg/kg	1.16	J	Tank	Total metals
Selenium	SFE201019A	6020A	7.13	mg/kg	0.056	J	Tank	Total metals
Silver	SFE201019A	6020A	2.67	mg/kg	0.025		Tank	Total metals
Sodium	SFE201019A	6020A	a	mg/kg	3.78	R	Tank	Total metals
Thallium	SFE201019A	6020A	a	mg/kg	0.082	U	Tank	Total metals
Vanadium	SFE201019A	6020A	15.3	mg/kg	1.87	J	Tank	Total metals

a. No result based on qualifier. See Section 4 for definitions of qualifiers.

Table A-1. (continued).

Compound/Isotope	Sample ID	Method	Results	Units	Detection Limit	Qualifier	Tank/Vault	Remarks
Zinc	SFE201019A	6020A	302	mg/kg	10.5	J	Tank	Total metals
Mercury	SFE201019A	7471A	17.9	mg/kg	1.16		Tank	Total metals
Aluminum	SFE201029A	6020A	4,050	mg/kg	0.844	J	Tank	Total metals
Antimony	SFE201029A	6020A	4.78	mg/kg	0.03	J	Tank	Total metals
Arsenic	SFE201029A	6020A	5.04	mg/kg	0.04		Tank	Total metals
Barium	SFE201029A	6020A	74.5	mg/kg	0.099		Tank	Total metals
Beryllium	SFE201029A	6020A	a	mg/kg	0.035	U	Tank	Total metals
Cadmium	SFE201029A	6020A	7.34	mg/kg	0.082	J	Tank	Total metals
Calcium	SFE201029A	6020A	4,050	mg/kg	42.5		Tank	Total metals
Chromium	SFE201029A	6020A	669	mg/kg	0.069	J	Tank	Total metals
Cobalt	SFE201029A	6020A	4.75	mg/kg	0.026		Tank	Total metals
Copper	SFE201029A	6020A	38	mg/kg	0.201	J	Tank	Total metals
Iron	SFE201029A	6020A	17,900	mg/kg	2.18		Tank	Total metals
Lead	SFE201029A	6020A	745	mg/kg	0.109		Tank	Total metals
Magnesium	SFE201029A	6020A	642	mg/kg	0.68	J	Tank	Total metals
Manganese	SFE201029A	6020A	96	mg/kg	0.103	J	Tank	Total metals
Nickel	SFE201029A	6020A	302	mg/kg	0.352	J	Tank	Total metals
Potassium	SFE201029A	6020A	497	mg/kg	1.16	J	Tank	Total metals
Selenium	SFE201029A	6020A	17	mg/kg	0.055	J	Tank	Total metals
Silver	SFE201029A	6020A	2.38	mg/kg	0.025		Tank	Total metals
Sodium	SFE201029A	6020A	a	mg/kg	3.76	R	Tank	Total metals
Thallium	SFE201029A	6020A	0.118	mg/kg	0.082		Tank	Total metals
Vanadium	SFE201029A	6020A	13.8	mg/kg	1.86	J	Tank	Total metals
Zinc	SFE201029A	6020A	234	mg/kg	10.4	J	Tank	Total metals
Mercury	SFE201029A	7471A	18.9	mg/kg	1.17		Tank	Total metals
Aluminum	SFE20102029A	6020A	7,050	mg/kg	0.76		Vault	Total metals

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a. No result based on qualifier. See Section 4 for definitions of qualifiers.

Table A-1. (continued).

Compound/Isotope	Sample ID	Method	Results	Units	Detection Limit	Qualifier	Tank/Vault	Remarks
Antimony	SFE20102029A	6020A	a	mg/kg	0.027	UJ	Vault	Total metals
Arsenic	SFE20102029A	6020A	8.12	mg/kg	0.036		Vault	Total metals
Barium	SFE20102029A	6020A	295	mg/kg	0.089	J	Vault	Total metals
Beryllium	SFE20102029A	6020A	a	mg/kg	0.032	U	Vault	Total metals
Cadmium	SFE20102029A	6020A	14.7	mg/kg	0.074	J	Vault	Total metals
Calcium	SFE20102029A	6020A	83,300	mg/kg	38.3		Vault	Total metals
Chromium	SFE20102029A	6020A	914	mg/kg	0.062		Vault	Total metals
Cobalt	SFE20102029A	6020A	28.3	mg/kg	0.024		Vault	Total metals
Copper	SFE20102029A	6020A	262	mg/kg	0.181		Vault	Total metals
Iron	SFE20102029A	6020A	28,500	mg/kg	1.96		Vault	Total metals
Lead	SFE20102029A	6020A	1,130	mg/kg	0.099		Vault	Total metals
Magnesium	SFE20102029A	6020A	2,220	mg/kg	0.613		Vault	Total metals
Manganese	SFE20102029A	6020A	261	mg/kg	0.093	J	Vault	Total metals
Nickel	SFE20102029A	6020A	131	mg/kg	0.317	J	Vault	Total metals
Potassium	SFE20102029A	6020A	1,870	mg/kg	1.04		Vault	Total metals
Selenium	SFE20102029A	6020A	3.09	mg/kg	0.05	J	Vault	Total metals
Silver	SFE20102029A	6020A	1.7	mg/kg	0.023		Vault	Total metals
Sodium	SFE20102029A	6020A	1,960	mg/kg	3.39		Vault	Total metals
Thallium	SFE20102029A	6020A	0.143	mg/kg	0.074		Vault	Total metals
Vanadium	SFE20102029A	6020A	48.3	mg/kg	1.68		Vault	Total metals
Zinc	SFE20102029A	6020A	943	mg/kg	9.4	J	Vault	Total metals
Mercury	SFE20102029A	7471A	0.182	mg/kg	0.012		Vault	Total metals
Aluminum	SFE20102019A	6020A	6,290	mg/kg	0.769		Vault	Total metals
Antimony	SFE20102019A	6020A	a	mg/kg	0.028	UJ	Vault	Total metals
Arsenic	SFE20102019A	6020A	6.79	mg/kg	0.037		Vault	Total metals
Barium	SFE20102019A	6020A	198	mg/kg	0.091	J	Vault	Total metals

a. No result based on qualifier. See Section 4 for definitions of qualifiers.

Table A-1. (continued).

Compound/Isotope	Sample ID	Method	Results	Units	Detection Limit	Qualifier	Tank/Vault	Remarks
Beryllium	SFE20102019A	6020A	a	mg/kg	0.032	U	Vault	Total metals
Cadmium	SFE20102019A	6020A	11.4	mg/kg	0.075	J	Vault	Total metals
Calcium	SFE20102019A	6020A	73,200	mg/kg	38.8		Vault	Total metals
Chromium	SFE20102019A	6020A	442	mg/kg	0.063		Vault	Total metals
Cobalt	SFE20102019A	6020A	24.3	mg/kg	0.024		Vault	Total metals
Copper	SFE20102019A	6020A	209	mg/kg	0.183		Vault	Total metals
Iron	SFE20102019A	6020A	17,100	mg/kg	1.98		Vault	Total metals
Lead	SFE20102019A	6020A	877	mg/kg	0.1		Vault	Total metals
Magnesium	SFE20102019A	6020A	3,270	mg/kg	0.62		Vault	Total metals
Manganese	SFE20102019A	6020A	260	mg/kg	0.094	J	Vault	Total metals
Nickel	SFE20102019A	6020A	120	mg/kg	0.321	J	Vault	Total metals
Potassium	SFE20102019A	6020A	1,770	mg/kg	1.06		Vault	Total metals
Selenium	SFE20102019A	6020A	1.54	mg/kg	0.05	J	Vault	Total metals
Silver	SFE20102019A	6020A	1.8	mg/kg	0.023		Vault	Total metals
Sodium	SFE20102019A	6020A	2,130	mg/kg	3.43		Vault	Total metals
Thallium	SFE20102019A	6020A	0.154	mg/kg	0.075		Vault	Total metals
Vanadium	SFE20102019A	6020A	19.6	mg/kg	1.7		Vault	Total metals
Zinc	SFE20102019A	6020A	867	mg/kg	9.52	J	Vault	Total metals
Mercury	SFE20102019A	7471A	0.168	mg/kg	0.011		Vault	Total metals
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Antimony	SFE201019A	TCLP	3	µg/L	0.267		Tank	UTS metals - TCLP extraction
Arsenic	SFE201019A	TCLP	2.6	µg/L	0.356		Tank	UTS metals - TCLP extraction
Barium	SFE201019A	TCLP	112	µg/L	0.878		Tank	UTS metals - TCLP extraction
Beryllium	SFE201019A	TCLP	a	µg/L	0.311	U	Tank	UTS metals - TCLP extraction
Cadmium	SFE201019A	TCLP	96.4	µg/L	0.722	J	Tank	UTS metals - TCLP extraction
Chromium	SFE201019A	TCLP	12	µg/L	0.611		Tank	UTS metals - TCLP extraction

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a. No result based on qualifier. See Section 4 for definitions of qualifiers.

Table A-1. (continued).

Compound/Isotope	Sample ID	Method	Results	Units	Detection Limit	Qualifier	Tank/Vault	Remarks
Lead	SFE201019A	TCLP	438	µg/L	0.967		Tank	UTS metals - TCLP extraction
Nickel	SFE201019A	TCLP	487	µg/L	3.11		Tank	UTS metals - TCLP extraction
Selenium	SFE201019A	TCLP	14.6	µg/L	0.489		Tank	UTS metals - TCLP extraction
Silver	SFE201019A	TCLP	a	µg/L	0.122	U	Tank	UTS metals - TCLP extraction
Thallium	SFE201019A	TCLP	1.54	µg/L	0.722		Tank	UTS metals - TCLP extraction
Vanadium	SFE201019A	TCLP	a	µg/L	16.4	U	Tank	UTS metals - TCLP extraction
Zinc	SFE201019A	TCLP	1,380	µg/L	92.2	J	Tank	UTS metals - TCLP extraction
Mercury	SFE201019A	TCLP	a	µg/L	0.14	UJ	Tank	UTS metals - TCLP extraction
Antimony	SFE201029A	TCLP	2.4	µg/L	0.267		Tank	UTS metals - TCLP extraction
Arsenic	SFE201029A	TCLP	3.87	µg/L	0.356		Tank	UTS metals - TCLP extraction
Barium	SFE201029A	TCLP	126	µg/L	0.878		Tank	UTS metals - TCLP extraction
Beryllium	SFE201029A	TCLP	a	µg/L	0.311	U	Tank	UTS metals - TCLP extraction
Cadmium	SFE201029A	TCLP	107	µg/L	0.722	J	Tank	UTS metals - TCLP extraction
Chromium	SFE201029A	TCLP	40.1	µg/L	0.611		Tank	UTS metals - TCLP extraction
Lead	SFE201029A	TCLP	1,320	µg/L	0.967		Tank	UTS metals - TCLP extraction
Nickel	SFE201029A	TCLP	1,080	µg/L	3.11		Tank	UTS metals - TCLP extraction
Selenium	SFE201029A	TCLP	94.6	µg/L	0.489		Tank	UTS metals - TCLP extraction
Silver	SFE201029A	TCLP	a	µg/L	0.122	U	Tank	UTS metals - TCLP extraction
Thallium	SFE201029A	TCLP	a	µg/L	0.722	U	Tank	UTS metals - TCLP extraction
Vanadium	SFE201029A	TCLP	a	µg/L	16.4	U	Tank	UTS metals - TCLP extraction
Zinc	SFE201029A	TCLP	1,780	µg/L	92.2	J	Tank	UTS metals - TCLP extraction
Mercury	SFE201029A	TCLP	a	µg/L	0.14	UJ	Tank	UTS metals - TCLP extraction
Antimony	SFE20102019A	TCLP	3.52	µg/L	0.267		Vault	UTS metals - TCLP extraction
Arsenic	SFE20102019A	TCLP	2.5	µg/L	0.356		Vault	UTS metals - TCLP extraction
Barium	SFE20102019A	TCLP	129	µg/L	0.878	J	Vault	UTS metals - TCLP extraction

a. No result based on qualifier. See Section 4 for definitions of qualifiers.

Table A-1. (continued).

Compound/Isotope	Sample ID	Method	Results	Units	Detection Limit	Qualifier	Tank/Vault	Remarks
Beryllium	SFE20102019A	TCLP	0.333	µg/L	0.311		Vault	UTS metals - TCLP extraction
Cadmium	SFE20102019A	TCLP	107	µg/L	0.722		Vault	UTS metals - TCLP extraction
Chromium	SFE20102019A	TCLP	13.6	µg/L	0.611		Vault	UTS metals - TCLP extraction
Lead	SFE20102019A	TCLP	33.1	µg/L	0.967	J	Vault	UTS metals - TCLP extraction
Nickel	SFE20102019A	TCLP	1,010	µg/L	3.11		Vault	UTS metals - TCLP extraction
Selenium	SFE20102019A	TCLP	3.47	µg/L	0.489		Vault	UTS metals - TCLP extraction
Silver	SFE20102019A	TCLP	a	µg/L	0.122	UJ	Vault	UTS metals - TCLP extraction
Thallium	SFE20102019A	TCLP	6.56	µg/L	0.722		Vault	UTS metals - TCLP extraction
Vanadium	SFE20102019A	TCLP	a	µg/L	16.4	U	Vault	UTS metals - TCLP extraction
Zinc	SFE20102019A	TCLP	6,790	µg/L	92.2		Vault	UTS metals - TCLP extraction
Mercury	SFE20102019A	TCLP	a	µg/L	0.14	UJ	Vault	UTS metals - TCLP extraction
Antimony	SFE20102029A	TCLP	8.6	µg/L	0.267		Vault	UTS metals - TCLP extraction
Arsenic	SFE20102029A	TCLP	2.97	µg/L	0.356		Vault	UTS metals - TCLP extraction
Barium	SFE20102029A	TCLP	107	µg/L	0.878	J	Vault	UTS metals - TCLP extraction
Beryllium	SFE20102029A	TCLP	0.356	µg/L	0.311		Vault	UTS metals - TCLP extraction
Cadmium	SFE20102029A	TCLP	106	µg/L	0.722		Vault	UTS metals - TCLP extraction
Chromium	SFE20102029A	TCLP	11.4	µg/L	0.611		Vault	UTS metals - TCLP extraction
Lead	SFE20102029A	TCLP	24	µg/L	0.967	J	Vault	UTS metals - TCLP extraction
Nickel	SFE20102029A	TCLP	858	µg/L	3.11		Vault	UTS metals - TCLP extraction
Selenium	SFE20102029A	TCLP	a	µg/L	0.489	UJ	Vault	UTS metals - TCLP extraction
Silver	SFE20102029A	TCLP	a	µg/L	0.122	UJ	Vault	UTS metals - TCLP extraction
Thallium	SFE20102029A	TCLP	4.01	µg/L	0.722		Vault	UTS metals - TCLP extraction
Vanadium	SFE20102029A	TCLP	a	µg/L	16.4	U	Vault	UTS metals - TCLP extraction
Zinc	SFE20102029A	TCLP	6,090	µg/L	92.2		Vault	UTS metals - TCLP extraction
Mercury	SFE20102029A	TCLP	a	µg/L	0.14	UJ	Vault	UTS metals - TCLP extraction

a. No result based on qualifier. See Section 4 for definitions of qualifiers.

Table A-1. (continued).

Compound/Isotope	Sample ID	Method	Results	Units	Detection Limit	Qualifier	Tank/Vault	Remarks
pH	SFE20102019A	SW9045C	8.4	pH units			Vault	
pH	SFE20102029A	SW9045C	8.1	pH units			Vault	
pH	SFE201019A	SW9045C	4.4	pH units			Tank	
pH	SFE201029A	SW9045C	4.21	pH units			Tank	
Aroclor-1232	SFE201011G	8082	a	mg/kg		U	Tank	
Aroclor-1221	SFE201011G	8082	a	mg/kg		U	Tank	
Aroclor-1242	SFE201011G	8082	a	mg/kg		U	Tank	
Aroclor-1016	SFE201011G	8082	a	mg/kg		U	Tank	
Aroclor-1248	SFE201011G	8082	a	mg/kg		U	Tank	
Aroclor-1254	SFE201011G	8082	a	mg/kg		U	Tank	
Aroclor-1260	SFE201011G	8082	1.20E+01	mg/kg		J	Tank	
Aroclor-1232	SFE201021G	8082	a	mg/kg		U	Tank	
Aroclor-1221	SFE201021G	8082	a	mg/kg		U	Tank	
Aroclor-1242	SFE201021G	8082	a	mg/kg		U	Tank	
Aroclor-1016	SFE201021G	8082	a	mg/kg		U	Tank	
Aroclor-1248	SFE201021G	8082	a	mg/kg		U	Tank	
Aroclor-1254	SFE201021G	8082	a	mg/kg		U	Tank	
Aroclor-1260	SFE201021G	8082	6.60E+00	mg/kg		U	Tank	Presumptively present
Aroclor-1232	SFE20102011G	8082	a	mg/kg		U	Vault	
Aroclor-1221	SFE20102011G	8082	a	mg/kg		U	Vault	
Aroclor-1242	SFE20102011G	8082	a	mg/kg		U	Vault	
Aroclor-1016	SFE20102011G	8082	a	mg/kg		U	Vault	
Aroclor-1248	SFE20102011G	8082	a	mg/kg		U	Vault	
Aroclor-1254	SFE20102011G	8082	a	mg/kg		U	Vault	
Aroclor-1260	SFE20102011G	8082	4.30E-01	mg/kg			Vault	

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a. No result based on qualifier. See Section 4 for definitions of qualifiers.

Table A-1. (continued).

Compound/Isotope	Sample ID	Method	Results	Units	Detection Limit	Qualifier	Tank/Vault	Remarks
Aroclor-1232	SFE20102011G	8082	a	mg/kg		U	Vault	
Aroclor-1221	SFE20102021G	8082	a	mg/kg		U	Vault	
Aroclor-1242	SFE20102021G	8082	a	mg/kg		U	Vault	
Aroclor-1016	SFE20102021G	8082	a	mg/kg		U	Vault	
Aroclor-1248	SFE20102021G	8082	a	mg/kg		U	Vault	
Aroclor-1254	SFE20102021G	8082	a	mg/kg		U	Vault	
Aroclor-1260	SFE20102021G	8082	8.80E-01	mg/kg		J	Vault	
<hr/>								
Bromide	SFE201019A	9056	a	mg/kg	0.25	U	Tank	
Chloride	SFE201019A	9056	19.50	mg/kg	2.5	J	Tank	
Fluoride	SFE201019A	9056	a	mg/kg	0.25	U	Tank	
Nitrate as N	SFE201019A	9056	a	mg/kg	0.06	UJ	Tank	
Ortho-phosphate as P	SFE201019A	9056	0.51	mg/kg	0.08		Tank	
Sulfate	SFE201019A	9056	4.63	mg/kg	0.25	J	Tank	
Bromide	SFE201029A	9056	a	mg/kg	0.25	U	Tank	
Chloride	SFE201029A	9056	32.60	mg/kg	2.5	J	Tank	
Fluoride	SFE201029A	9056	a	mg/kg	0.25	U	Tank	
Nitrate as N	SFE201029A	9056	a	mg/kg	0.06	UJ	Tank	
Ortho-phosphate as P	SFE201029A	9056	0.27	mg/kg	0.08		Tank	
Sulfate	SFE201029A	9056	4.69	mg/kg	0.25	J	Tank	
Bromide	SFE20102019A	9056	a	mg/kg	0.25	U	Vault	
Chloride	SFE20102019A	9056	40.00	mg/kg	25	J	Vault	
Fluoride	SFE20102019A	9056	a	mg/kg	0.25	U	Vault	
Nitrate as N	SFE20102019A	9056	5.74	mg/kg	0.06	J	Vault	
Ortho-phosphate as P	SFE20102019A	9056	a	mg/kg	8.16	U	Vault	
Sulfate	SFE20102019A	9056	261	mg/kg	25	J	Vault	

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a. No result based on qualifier. See Section 4 for definitions of qualifiers.

Table A-1. (continued).

Compound/Isotope	Sample ID	Method	Results	Units	Detection Limit	Qualifier	Tank/Vault	Remarks
Bromide	SFE20102029A	9056	a	mg/kg	0.25	U	Vault	
Chloride	SFE20102029A	9056	75.40	mg/kg	25	J	Vault	
Fluoride	SFE20102029A	9056	a	mg/kg	0.25	U	Vault	
Nitrate as N	SFE20102029A	9056	7.36	mg/kg	0.06	J	Vault	
Ortho-phosphate as P	SFE20102029A	9056	a	mg/kg	8.16	U	Vault	
Sulfate	SFE20102029A	9056	306	mg/kg	25	J	Vault	
1,1,1,2-tetrachloroethane	SFE201011G	SW8260B	0.034	mg/kg		J	Tank	
1,1,1-trichloroethane	SFE201011G	SW8260B	24.2	mg/kg		J	Tank	
1,1,2,2-tetrachloroethane	SFE201011G	SW8260B	a	mg/kg		R	Tank	
1,1,2-trichloroethane	SFE201011G	SW8260B	0.143	mg/kg		J	Tank	
1,1-dichloroethane	SFE201011G	SW8260B	5.39	mg/kg		J	Tank	
1,1-dichloroethene	SFE201011G	SW8260B	10.7	mg/kg		J	Tank	
1,2,3-trichloropropane	SFE201011G	SW8260B	a	mg/kg		R	Tank	
1,2-dibromo-3-chloropropane	SFE201011G	SW8260B	a	mg/kg		R	Tank	
1,2-dibromoethane	SFE201011G	SW8260B	a	mg/kg		R	Tank	
1,2-dichlorobenzene	SFE201011G	SW8260B	a	mg/kg		R	Tank	
1,2-dichloroethane	SFE201011G	SW8260B	a	mg/kg		R	Tank	
1,2-dichloropropane	SFE201011G	SW8260B	a	mg/kg		R	Tank	
1,3-dichlorobenzene	SFE201011G	SW8260B	a	mg/kg		R	Tank	
1,4-dichlorobenzene	SFE201011G	SW8260B	a	mg/kg		R	Tank	
1,4-dioxane	SFE201011G	SW8260B	a	mg/kg		R	Tank	
2-butanone	SFE201011G	SW8260B	a	mg/kg		R	Tank	
2-hexanone	SFE201011G	SW8260B	a	mg/kg		R	Tank	
4-methyl-2-pentanone	SFE201011G	SW8260B	a	mg/kg		R	Tank	
Acetone	SFE201011G	SW8260B	0.0912	mg/kg		J	Tank	

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a. No result based on qualifier. See Section 4 for definitions of qualifiers.

Table A-1. (continued).

Compound/Isotope	Sample ID	Method	Results	Units	Detection Limit	Qualifier	Tank/Vault	Remarks
Acetonitrile	SFE201011G	SW8260B	a	mg/kg		R	Tank	
Acrolein	SFE201011G	SW8260B	a	mg/kg		R	Tank	
Acrylonitrile	SFE201011G	SW8260B	a	mg/kg		R	Tank	
Allyl chloride	SFE201011G	SW8260B	a	mg/kg		R	Tank	
Benzene	SFE201011G	SW8260B	a	mg/kg		R	Tank	
Bromodichloromethane	SFE201011G	SW8260B	a	mg/kg		R	Tank	
Bromoform	SFE201011G	SW8260B	a	mg/kg		R	Tank	
Bromomethane	SFE201011G	SW8260B	a	mg/kg		R	Tank	
Carbon disulfide	SFE201011G	SW8260B	0.0016	mg/kg		J	Tank	
Carbon tetrachloride	SFE201011G	SW8260B	a	mg/kg		R	Tank	
Chlorobenzene	SFE201011G	SW8260B	0.0011	mg/kg		J	Tank	
Chlorodibromomethane	SFE201011G	SW8260B	a	mg/kg		R	Tank	
Chlorodifluoromethane	SFE201011G	SW8260B	0.0083	mg/kg		J	Tank	
Chloroethane	SFE201011G	SW8260B	0.0055	mg/kg		J	Tank	
Chloroform	SFE201011G	SW8260B	a	mg/kg		R	Tank	
Chloromethane	SFE201011G	SW8260B	0.0164	mg/kg		J	Tank	
Chloroprene	SFE201011G	SW8260B	a	mg/kg		R	Tank	
Cis-1,2-dichloroethene	SFE201011G	SW8260B	a	mg/kg		R	Tank	
Cis-1,3-dichloropropene	SFE201011G	SW8260B	a	mg/kg		R	Tank	
Dibromomethane	SFE201011G	SW8260B	a	mg/kg		R	Tank	
Dichlorodifluoromethane	SFE201011G	SW8260B	a	mg/kg		R	Tank	
Ethyl methacrylate	SFE201011G	SW8260B	a	mg/kg		R	Tank	
Ethylbenzene	SFE201011G	SW8260B	0.0082	mg/kg		J	Tank	
Iodomethane	SFE201011G	SW8260B	a	mg/kg		R	Tank	
Isobutyl alcohol	SFE201011G	SW8260B	a	mg/kg		R	Tank	
Methyl methacrylate	SFE201011G	SW8260B	a	mg/kg		R	Tank	

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a. No result based on qualifier. See Section 4 for definitions of qualifiers.

Table A-1. (continued).

Compound/Isotope	Sample ID	Method	Results	Units	Detection Limit	Qualifier	Tank/Vault	Remarks
Methylacrylonitrile	SFE201011G	SW8260B	a	mg/kg		R	Tank	
Methylene chloride	SFE201011G	SW8260B	a	mg/kg		R	Tank	
Propionitrile	SFE201011G	SW8260B	a	mg/kg		R	Tank	
Styrene	SFE201011G	SW8260B	a	mg/kg		R	Tank	
Tetrachloroethene	SFE201011G	SW8260B	0.0021	mg/kg		J	Tank	
Toluene	SFE201011G	SW8260B	0.0466	mg/kg		J	Tank	
Trans-1,2-dichloroethene	SFE201011G	SW8260B	a	mg/kg		R	Tank	
Trans-1,3-dichloropropene	SFE201011G	SW8260B	a	mg/kg		R	Tank	
Trans-1,4-dichloro-2-butene	SFE201011G	SW8260B	a	mg/kg		R	Tank	
Trichloroethene	SFE201011G	SW8260B	0.0056	mg/kg		J	Tank	
Trichlorofluoromethane	SFE201011G	SW8260B	a	mg/kg		R	Tank	
Vinyl acetate	SFE201011G	SW8260B	a	mg/kg		R	Tank	
Vinyl chloride	SFE201011G	SW8260B	0.0077	mg/kg		J	Tank	
Xylene	SFE201011G	SW8260B	0.0508	mg/kg		J	Tank	
1,1,1,2-tetrachloroethane	SFE201021G	SW8260B	0.0341	mg/kg		J	Tank	
1,1,1-trichloroethane	SFE201021G	SW8260B	30.1	mg/kg		J	Tank	
1,1,2,2-tetrachloroethane	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
1,1,2-trichloroethane	SFE201021G	SW8260B	0.139	mg/kg		J	Tank	
1,1-dichloroethane	SFE201021G	SW8260B	3.74	mg/kg		J	Tank	
1,1-dichloroethene	SFE201021G	SW8260B	6.9	mg/kg		J	Tank	
1,2,3-trichloropropane	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
1,2-dibromo-3-chloropropane	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
1,2-dibromoethane	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
1,2-dichlorobenzene	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
1,2-dichloroethane	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
1,2-dichloropropane	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	

a. No result based on qualifier. See Section 4 for definitions of qualifiers.

Table A-1. (continued).

Compound/Isotope	Sample ID	Method	Results	Units	Detection Limit	Qualifier	Tank/Vault	Remarks
1,3-dichlorobenzene	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
1,4-dichlorobenzene	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
1,4-dioxane	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
2-butanone	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
2-hexanone	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
4-methyl-2-pentanone	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
Acetone	SFE201021G	SW8260B	a	mg/kg		U	Tank	
Acetonitrile	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
Acrolein	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
Acrylonitrile	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
Allyl chloride	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
Benzene	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
Bromodichloromethane	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
Bromoform	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
Bromomethane	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
Carbon disulfide	SFE201021G	SW8260B	0.0011	mg/kg		J	Tank	
Carbon tetrachloride	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
Chlorobenzene	SFE201021G	SW8260B	0.0014	mg/kg		J	Tank	
Chlorodibromomethane	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
Chlorodifluoromethane	SFE201021G	SW8260B	0.0072	mg/kg		J	Tank	
Chloroethane	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
Chloroform	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
Chloromethane	SFE201021G	SW8260B	0.0036	mg/kg		J	Tank	
Chloroprene	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
Cis-1,2-dichloroethene	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
Cis-1,3-dichloropropene	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	

a. No result based on qualifier. See Section 4 for definitions of qualifiers.

Table A-1. (continued).

Compound/Isotope	Sample ID	Method	Results	Units	Detection Limit	Qualifier	Tank/Vault	Remarks
Dibromomethane	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
Dichlorodifluoromethane	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
Ethyl methacrylate	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
Ethylbenzene	SFE201021G	SW8260B	0.0105	mg/kg		J	Tank	
Iodomethane	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
Isobutyl alcohol	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
Methyl methacrylate	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
Methylacrylonitrile	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
Methylene chloride	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
Propionitrile	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
Styrene	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
Tetrachloroethene	SFE201021G	SW8260B	0.0023	mg/kg		J	Tank	
Toluene	SFE201021G	SW8260B	0.0526	mg/kg		J	Tank	
Trans-1,2-dichloroethene	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
Trans-1,3-dichloropropene	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
Trans-1,4-dichloro-2-butene	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
Trichloroethene	SFE201021G	SW8260B	0.0053	mg/kg		J	Tank	
Trichlorofluoromethane	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
Vinyl acetate	SFE201021G	SW8260B	a	mg/kg		UJ	Tank	
Vinyl chloride	SFE201021G	SW8260B	0.0047	mg/kg		J	Tank	
Xylene	SFE201021G	SW8260B	0.0737	mg/kg		J	Tank	
1,2,4,5-tetrachlorobenzene	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
1,2,4-trichlorobenzene	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
1,2-dichlorobenzene	SFE201011G	SW8270C	a	mg/kg		R	Tank	Semivolatile organic analysis (SVOA)
1,3,5-trinitrobenzene	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)

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a. No result based on qualifier. See Section 4 for definitions of qualifiers.

Table A-1. (continued).

Compound/Isotope	Sample ID	Method	Results	Units	Detection Limit	Qualifier	Tank/Vault	Remarks
1,3-dichlorobenzene	SFE201011G	SW8270C	a	mg/kg		R	Tank	Semivolatile organic analysis (SVOA)
1,3-dinitrobenzene	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
1,4-dichlorobenzene	SFE201011G	SW8270C	a	mg/kg		R	Tank	Semivolatile organic analysis (SVOA)
1,4-naphthoquinone	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
1,4-phenylenediamine	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
1-naphthylamine	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
2,2'-oxybis(1-chloropropane)	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
2,3,4,6-tetrachlorophenol	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
2,4,5-trichlorophenol	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
2,4,6-trichlorophenol	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
2,4-dichlorophenol	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
2,4-dimethylphenol	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
2,4-dinitrophenol	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
2,4-dinitrotoluene	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
2,6-dichlorophenol	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
2,6-dinitrotoluene	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
2-acetylaminofluorene	SFE201011G	SW8270C	a	mg/kg		R	Tank	Semivolatile organic analysis (SVOA)
2-amino-4-nitrotoluene	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
2-chloronaphthalene	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
2-chlorophenol	SFE201011G	SW8270C	a	mg/kg		R	Tank	Semivolatile organic analysis (SVOA)
2-methylnaphthalene	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
2-methylphenol	SFE201011G	SW8270C	a	mg/kg		R	Tank	Semivolatile organic analysis (SVOA)
2-naphthylamine	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
2-nitroaniline	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
2-nitrophenol	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
2-picoline	SFE201011G	SW8270C	a	mg/kg		R	Tank	Semivolatile organic analysis (SVOA)

a. No result based on qualifier. See Section 4 for definitions of qualifiers.

Table A-1. (continued).

Compound/Isotope	Sample ID	Method	Results	Units	Detection Limit	Qualifier	Tank/Vault	Remarks
2-sec-butyl-4,6-dinitrophenol	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
3,3'-dichlorobenzidine	SFE201011G	SW8270C	a	mg/kg		R	Tank	Semivolatile organic analysis (SVOA)
3,3'-dimethylbenzidine	SFE201011G	SW8270C	a	mg/kg		R	Tank	Semivolatile organic analysis (SVOA)
3-methylcholanthrene	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
3-methylphenol	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
3-nitroaniline	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
4,6-dinitro-2-methylphenol	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
4-aminobiphenyl	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
4-bromophenyl phenyl ether	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
4-chloro-3-methylphenol	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
4-chloroaniline	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
4-chlorophenyl phenyl ether	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
4-dimethylaminoazobenzene	SFE201011G	SW8270C	a	mg/kg		R	Tank	Semivolatile organic analysis (SVOA)
4-methylphenol	SFE201011G	SW8270C	a	mg/kg		R	Tank	Semivolatile organic analysis (SVOA)
4-nitroaniline	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
4-nitrophenol	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
4-nitroquinoline-1-oxide	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
7,12-dimethylbenz(a)anthracene	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Acenaphthene	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Acenaphthylene	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Acetophenone	SFE201011G	SW8270C	a	mg/kg		R	Tank	Semivolatile organic analysis (SVOA)
Aniline	SFE201011G	SW8270C	a	mg/kg		R	Tank	Semivolatile organic analysis (SVOA)
Anthracene	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Aramite	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Benzo(a)anthracene	SFE201011G	SW8270C	a	mg/kg		R	Tank	Semivolatile organic analysis (SVOA)

a. No result based on qualifier. See Section 4 for definitions of qualifiers.

Table A-1. (continued).

Compound/Isotope	Sample ID	Method	Results	Units	Detection Limit	Qualifier	Tank/Vault	Remarks
Benzo(a)pyrene	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Benzo(b)fluoranthene	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Benzo(g,h,i)perylene	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Benzo(k)fluoranthene	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Benzyl alcohol	SFE201011G	SW8270C	a	mg/kg		R	Tank	Semivolatile organic analysis (SVOA)
Bis(2-chloroethoxy) methane	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Bis(2-chloroethyl) ether	SFE201011G	SW8270C	a	mg/kg		R	Tank	Semivolatile organic analysis (SVOA)
Bis(2-ethylhexyl) phthalate	SFE201011G	SW8270C	32.9	mg/kg		J	Tank	Semivolatile organic analysis (SVOA)
Butylbenzylphthalate	SFE201011G	SW8270C	1.42	mg/kg		J	Tank	Semivolatile organic analysis (SVOA)
Chrysene	SFE201011G	SW8270C	a	mg/kg		R	Tank	Semivolatile organic analysis (SVOA)
Dibenz(a,h)anthracene	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Dibenzofuran	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Diethylphthalate	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Dimethyl phthalate	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Di-n-butylphthalate	SFE201011G	SW8270C	a	mg/kg		U	Tank	Semivolatile organic analysis (SVOA)
Di-n-octyl phthalate	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Diphenylamine	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Ethyl methanesulfonate	SFE201011G	SW8270C	a	mg/kg		R	Tank	Semivolatile organic analysis (SVOA)
Famphur	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Fluoranthene	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Fluorene	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Hexachlorobenzene	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Hexachlorobutadiene	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Hexachlorocyclopentadiene	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Hexachloroethane	SFE201011G	SW8270C	a	mg/kg		R	Tank	Semivolatile organic analysis (SVOA)
Hexachlorophene	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)

a. No result based on qualifier. See Section 4 for definitions of qualifiers.

Table A-1. (continued).

Compound/Isotope	Sample ID	Method	Results	Units	Detection Limit	Qualifier	Tank/Vault	Remarks
Hexachloropropene	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Indeno(1,2,3-cd)pyrene	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Isophorone	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Isosafrole	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Methapyrilene	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Methyl methanesulfonate	SFE201011G	SW8270C	a	mg/kg		R	Tank	Semivolatile organic analysis (SVOA)
Naphthalene	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Nitrobenzene	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
N-nitrosodiethylamine	SFE201011G	SW8270C	a	mg/kg		R	Tank	Semivolatile organic analysis (SVOA)
N-nitrosodimethylamine	SFE201011G	SW8270C	a	mg/kg		R	Tank	Semivolatile organic analysis (SVOA)
N-nitroso-di-n-butylamine	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
N-nitroso-di-n-dipropylamine	SFE201011G	SW8270C	a	mg/kg		R	Tank	Semivolatile organic analysis (SVOA)
N-nitrosodiphenylamine	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
N-nitrosomethylalkylamine	SFE201011G	SW8270C	a	mg/kg		R	Tank	Semivolatile organic analysis (SVOA)
N-nitrosomorpholine	SFE201011G	SW8270C	a	mg/kg		R	Tank	Semivolatile organic analysis (SVOA)
N-nitrosopiperidine	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
N-nitrosopyrrolidine	SFE201011G	SW8270C	a	mg/kg		R	Tank	Semivolatile organic analysis (SVOA)
O,O,O-triethyl phosphorothioate	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
o-toluidine	SFE201011G	SW8270C	a	mg/kg		R	Tank	Semivolatile organic analysis (SVOA)
Pentachlorobenzene	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Pentachloroethane	SFE201011G	SW8270C	a	mg/kg		R	Tank	Semivolatile organic analysis (SVOA)
Pentachloronitrobenzene	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Pentachlorophenol	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Phenacetin	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Phenanthrene	SFE201011G	SW8270C	0.389	mg/kg		J	Tank	Semivolatile organic analysis (SVOA)

a. No result based on qualifier. See Section 4 for definitions of qualifiers.

Table A-1. (continued).

Compound/Isotope	Sample ID	Method	Results	Units	Detection Limit	Qualifier	Tank/Vault	Remarks
Phenol	SFE201011G	SW8270C	a	mg/kg		R	Tank	Semivolatile organic analysis (SVOA)
Pronamide	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Pyrene	SFE201011G	SW8270C	a	mg/kg		R	Tank	Semivolatile organic analysis (SVOA)
Pyridine	SFE201011G	SW8270C	a	mg/kg		R	Tank	Semivolatile organic analysis (SVOA)
Safrole	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Thionazin	SFE201011G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
1,2,4,5-tetrachlorobenzene	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
1,2,4-trichlorobenzene	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
1,2-dichlorobenzene	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
1,3,5-trinitrobenzene	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
1,3-dichlorobenzene	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
1,3-dinitrobenzene	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
1,4-dichlorobenzene	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
1,4-naphthoquinone	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
1,4-phenylenediamine	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
1-naphthylamine	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
2,2'-oxybis(1-chloropropane)	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
2,3,4,6-tetrachlorophenol	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
2,4,5-trichlorophenol	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
2,4,6-trichlorophenol	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
2,4-dichlorophenol	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
2,4-dimethylphenol	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
2,4-dinitrophenol	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
2,4-dinitrotoluene	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
2,6-dichlorophenol	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
2,6-dinitrotoluene	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)

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a. No result based on qualifier. See Section 4 for definitions of qualifiers.

Table A-1. (continued).

Compound/Isotope	Sample ID	Method	Results	Units	Detection Limit	Qualifier	Tank/Vault	Remarks
2-acetylaminofluorene	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
2-amino-4-nitrotoluene	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
2-chloronaphthalene	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
2-chlorophenol	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
2-methylnaphthalene	SFE201021G	SW8270C	0.109	mg/kg		J	Tank	Semivolatile organic analysis (SVOA)
2-methylphenol	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
2-naphthylamine	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
2-nitroaniline	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
2-nitrophenol	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
2-picoline	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
2-sec-butyl-4,6-dinitrophenol	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
3,3'-dichlorobenzidine	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
3,3'-dimethylbenzidine	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
3-methylcholanthrene	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
3-methylphenol	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
3-nitroaniline	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
4,6-dinitro-2-methylphenol	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
4-aminobiphenyl	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
4-bromophenyl phenyl ether	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
4-chloro-3-methylphenol	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
4-chloroaniline	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
4-chlorophenyl phenyl ether	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
4-dimethylaminoazobenzene	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
4-methylphenol	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
4-nitroaniline	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
4-nitrophenol	SFE201021G	SW8270C	a	mg/kg		R	Tank	Semivolatile organic analysis (SVOA)

a. No result based on qualifier. See Section 4 for definitions of qualifiers.

Table A-1. (continued).

Compound/Isotope	Sample ID	Method	Results	Units	Detection Limit	Qualifier	Tank/Vault	Remarks
4-nitroquinoline-1-oxide	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
7,12-dimethylbenz(a)anthracene	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Acenaphthene	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Acenaphthylene	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Acetophenone	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Aniline	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Anthracene	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Aramite	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Benzo(a)anthracene	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Benzo(a)pyrene	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Benzo(b)fluoranthene	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Benzo(g,h,i)perylene	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Benzo(k)fluoranthene	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Benzyl alcohol	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Bis(2-chloroethoxy) methane	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Bis(2-chloroethyl) ether	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Bis(2-ethylhexyl) phthalate	SFE201021G	SW8270C	29.6	mg/kg		J	Tank	Semivolatile organic analysis (SVOA)
Butylbenzylphthalate	SFE201021G	SW8270C	0.717	mg/kg		J	Tank	Semivolatile organic analysis (SVOA)
Chrysene	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Dibenz(a,h)anthracene	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Dibenzofuran	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Diethylphthalate	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Dimethyl phthalate	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Di-n-butylphthalate	SFE201021G	SW8270C	a	mg/kg		U	Tank	Semivolatile organic analysis (SVOA)
Di-n-octyl phthalate	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Diphenylamine	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)

a. No result based on qualifier. See Section 4 for definitions of qualifiers.

Table A-1. (continued).

Compound/Isotope	Sample ID	Method	Results	Units	Detection Limit	Qualifier	Tank/Vault	Remarks
Ethyl methanesulfonate	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Famphur	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Fluoranthene	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Fluorene	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Hexachlorobenzene	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Hexachlorobutadiene	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Hexachlorocyclopentadiene	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Hexachloroethane	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Hexachlorophene	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Hexachloropropene	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Indeno(1,2,3-cd)pyrene	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Isophorone	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Isosafrole	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Methapyrilene	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Methyl methanesulfonate	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Naphthalene	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Nitrobenzene	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
N-nitrosodiethylamine	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
N-nitrosodimethylamine	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
N-nitroso-di-n-butylamine	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
N-nitroso-di-n-dipropylamine	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
N-nitrosodiphenylamine	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
N-nitrosomethylalkylamine	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
N-nitrosomorpholine	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
N-nitrosopiperidine	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
N-nitrosopyrrolidine	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)

a. No result based on qualifier. See Section 4 for definitions of qualifiers.

Table A-1. (continued).

Compound/Isotope	Sample ID	Method	Results	Units	Detection Limit	Qualifier	Tank/Vault	Remarks
O,O,O-triethyl phosphorothioate	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
o-toluidine	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Pentachlorobenzene	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Pentachloroethane	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Pentachloronitrobenzene	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Pentachlorophenol	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Phenacetin	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Phenanthrene	SFE201021G	SW8270C	0.328	mg/kg		J	Tank	Semivolatile organic analysis (SVOA)
Phenol	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Pronamide	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Pyrene	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Pyridine	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Safrole	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)
Thionazin	SFE201021G	SW8270C	a	mg/kg		UJ	Tank	Semivolatile organic analysis (SVOA)

a. No result based on qualifier. See Section 4 for definitions of qualifiers.